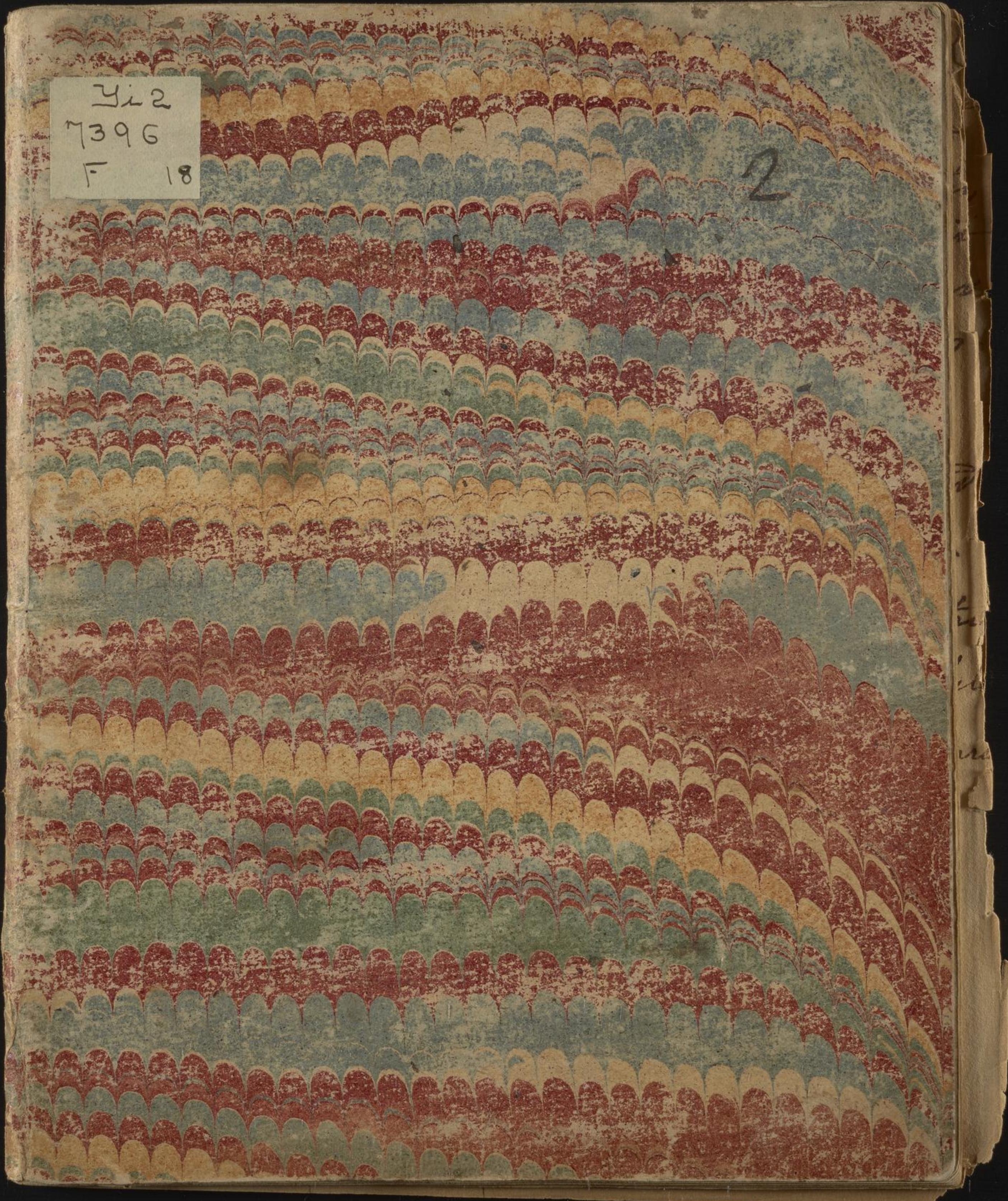
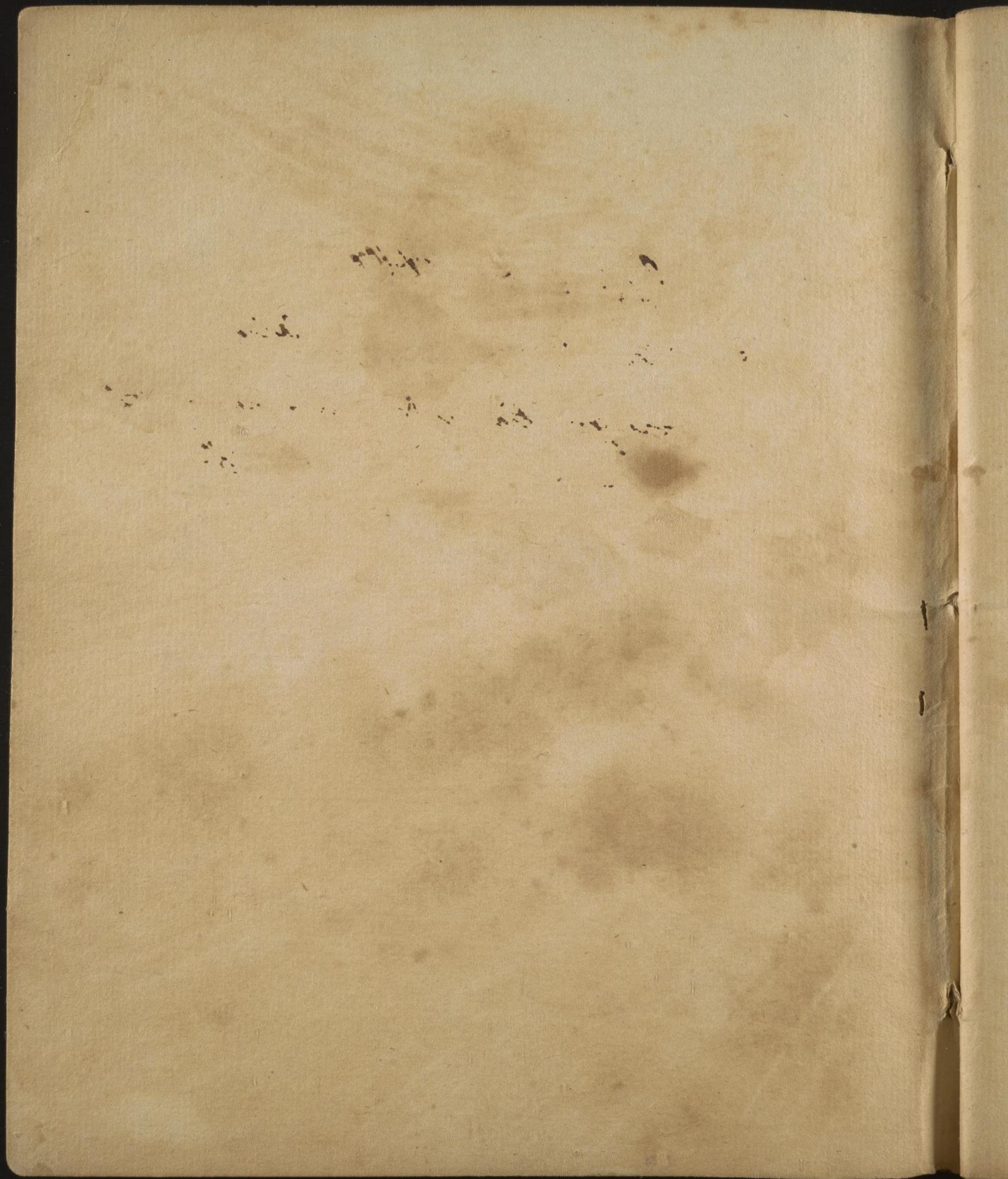


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2









Lectures on Pathology.  
Morbid Effects of Cold. p: 47.  
of Rarity & Density of the Air 80  
of Impregnations & mixtures of  
the Air — — 80



v I shall mention its positive, & 2<sup>d</sup> its  
relative effects. -

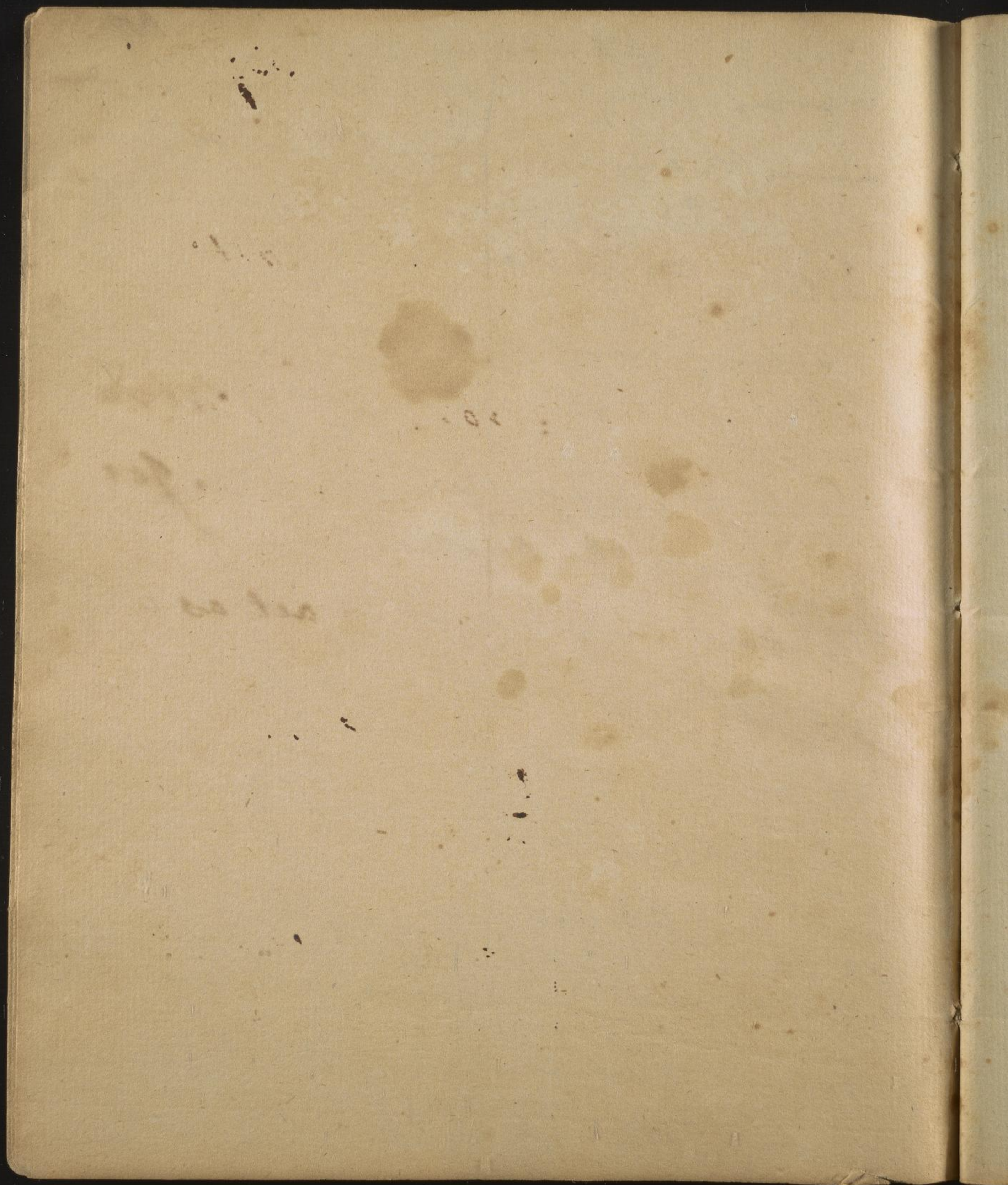


falls more abundantly  
~~now~~ rain in these Islands in one  
year than in any other of coun-  
try in Europe - or perhaps in the  
world. — tho' less than in the US —

Let us next attend to the effects  
of Cold upon the human body. V

Cold is a negative quality: It exists only from the abstraction of heat. It has been supposed to act as a stimulus upon the body, but this opinion has arisen only from an ignorance of that law in the animal Economy, that the abstraction of <sup>the</sup> stimulus of heat by increasing the excitability of the system renders it liable to be acted upon with more force by other







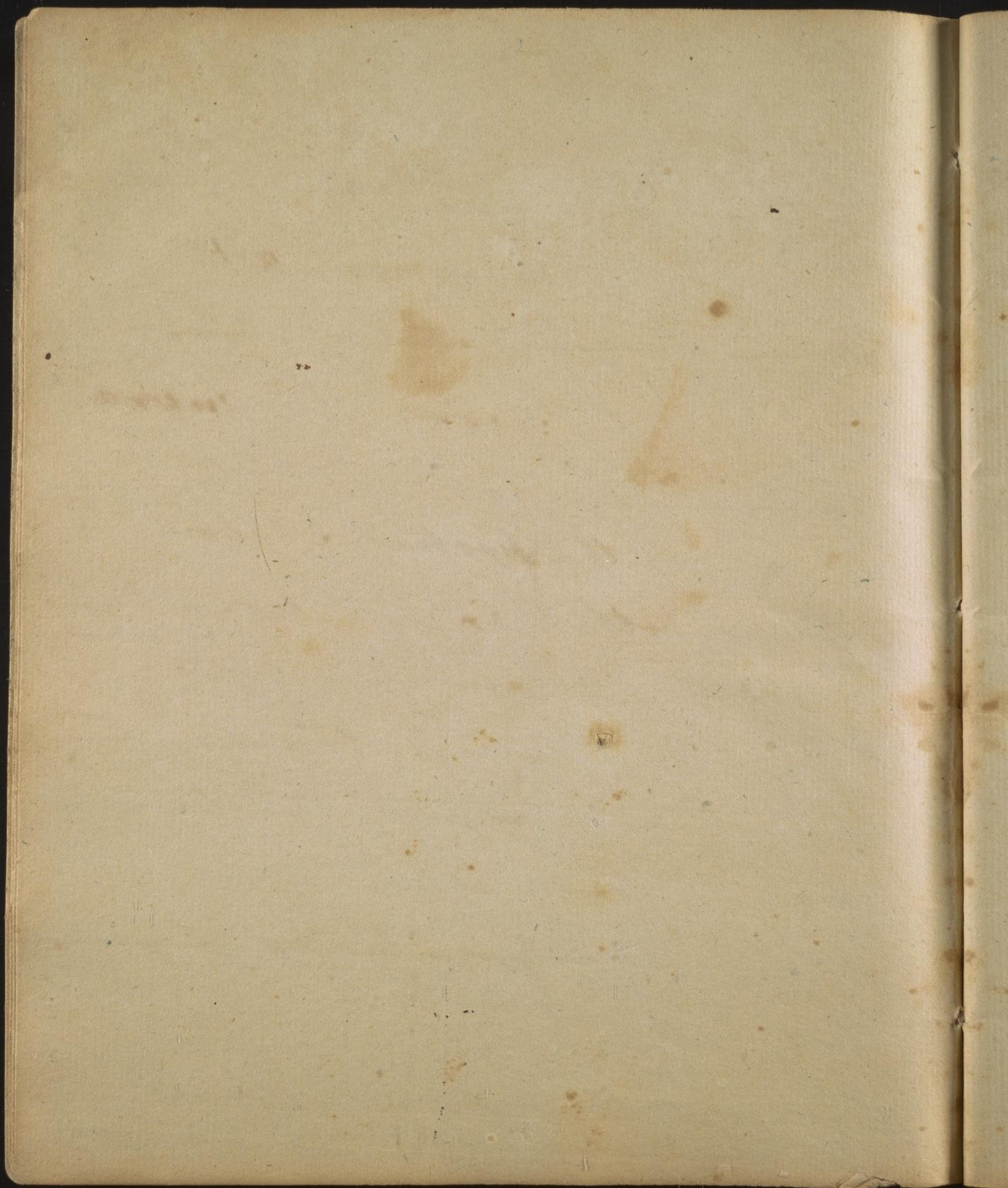
stimuli, and hence the vigor im-  
 -parted to the system by these stimuli  
 has been erroneously ascribed to  
 the cold. The universal action of  
 cold on the system is as a sedative.

This I infer <sup>1<sup>st</sup></sup> from the general  
 debility which follows the action  
 of cold on the system. Labourers &  
 travellers both bear witness to the truth  
 of this observation in the winter season.  
 2 from the ~~decreases~~ - <sup>decreases</sup> - ~~slowings~~ - <sup>slowness</sup> - ~~and~~  
 absence of pulse <sup>&</sup> from the <sup>weakness</sup> ~~slowness~~ -  
 -ness and death which follow cold.

The pulse of a Greenlanders is generally  
 beats but 40 strokes in a minute. all

these phenomena certainly indicate  
 the sedative operation of cold upon



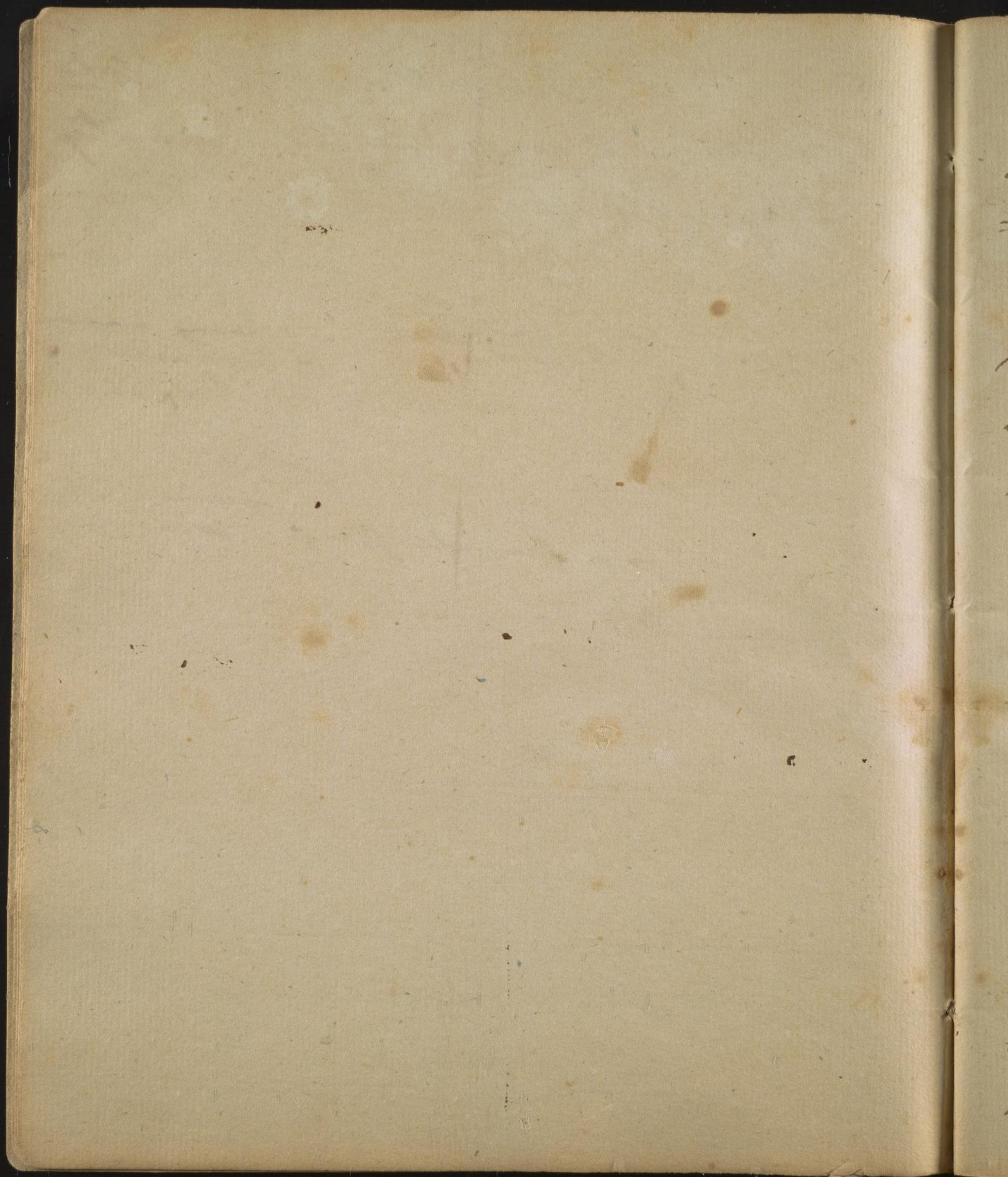




the system. 3 From the effects of cold  
in certain diseases being so exactly  
analogous to the effects of certain  
redative medicines such as bleeding -  
purgings - and low diet. - ~~They all~~ <sup>It</sup> ~~act~~ <sup>of Abstraction.</sup>  
acts by inducing ~~debility~~ <sup>the</sup> debility. This  
has often been demonstrated in in-  
flam<sup>y</sup> fevers - small pox - <sup>tonic</sup> mania  
& many other diseases of too much  
action. -

I know it may be said here in  
favor of the stimulating power of cold,  
that when we feel much debilitated by  
heat in summer, a sudden change  
in the air to a cooler temperature  
carries off that debility. Does not the  
cool air here act by bracing the

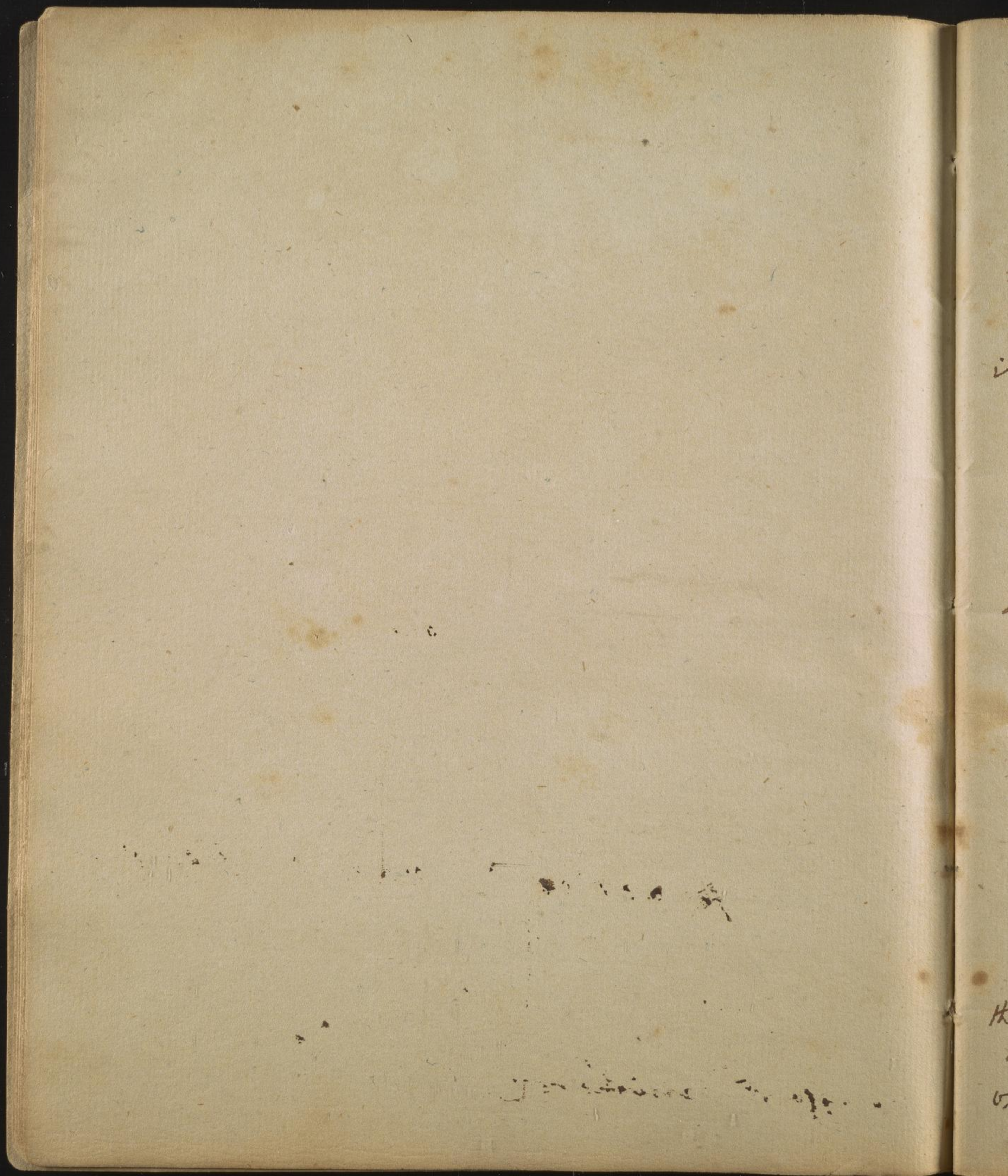






body? - I answer - no, - To understand  
 the meaning of this phenomenon, recollect  
 - what was said of the effects of heat  
 - It always produces ~~indirect debility~~ <sup>depression</sup>  
 by its excess. Let us suppose healthy  
 excitement to depend upon  $75^{\circ}$  of  
 heat according to Fahrenheit's Scale. now  
 supposing the  $\bar{t}$  should rise to  $95^{\circ}$  or  $100^{\circ}$ ,  
~~indirect debility~~ <sup>depression</sup> would immediately  
 be brought on in this <sup>State</sup> of the System.  
 let cool air be applied to the body suf-  
 - ficient to abstract the  $20$  or  $25^{\circ}$   
 of <sup>heat</sup> which we have been added to the  
 $75^{\circ}$ , the body will immediately re-  
 - turn to its healthy point of excite-  
 - ment, in consequence of which







Dyspepsion 51

the ~~indirect debility~~ will be removed,  
if the body will feel a sensation which  
will has been mistaken for the bracing  
effects of cold. The cool air only  
relieves the system from its <sup>Dyspepsion</sup> ~~indirect~~  
induced by cause of stimulus  
~~debility~~ and restores to it <sup>its</sup> healthy  
or tonic degree of heat. —

I beg of you Gent. to attend to  
this explanation of the supposed  
bracing effects of cold, for it is a  
key that unlocks the <sup>arcana</sup> ~~as many~~ <sup>phenomena in</sup> ~~errors~~  
of many diseases, and relieves us  
from many of the ~~absurdities~~ of Dr.  
Brown's practice in certain diseases.

If the pulse low - and scarcely to be felt,  
the beginning of <sup>or yellow fever</sup> ~~in a pleurisy~~ This depends upon  
<sup>Dyspepsion of pleurisy</sup> ~~or serofluous pleurisy~~ or the <sup>micrometric</sup> ~~stigmata~~ of ~~congestion~~  
~~indirect debility~~ induced by pain. Is



91

51



raised  
it removed by O.S. ? This depends  
upon those degrees of pain being abstracted  
which produced the <sup>Depression</sup> ~~indirect debility~~.  
Is the system <sup>uncommonly weak</sup> ~~is languid~~ that in  
the beginning of a bilious fever, ~~that~~ This frequently  
depends on <sup>Depression</sup> ~~indirect debility~~. - Is this  
weakness removed by an emetic ?  
This depends upon the abstraction of  
the stimulus of the bile from the  
Stomach which produced the <sup>Depression</sup> ~~indirect~~  
~~debility~~. - I am disposed to suspect  
~~that~~ The weak pulse which <sup>sometimes</sup> occurs  
in the beginning of Palsy & apoplexy,  
is frequently produced in like manner  
- <sup>great Depression,</sup> ~~never by indirect debility,~~ <sup>hence</sup> ~~but~~  
O.S. <sup>is the</sup> ~~even in such cases would be~~



✓ It affects the lungs breast when  
very intense with great pain. This  
was sensibly felt by the academicians  
who went to measure a degree near the  
North pole. —

Ec.

a. m. 1



a most effectual remedy to remove  
 it <sup>It acts</sup> by abstracting excess of stimulus;  
 than the usual stimulating remedies  
 which are prescribed in that state  
 of the system. I have heard of Dr. McKnight  
 once saved a patient in an Apoplexy  
 who had this weak & slow pulse by  
 taking from him ~~big~~ of blood. The  
 pulse sometimes descends to 40 strokes  
 in these cases & is again so weak as  
 scarcely to be perceptible. —

I shall now proceed to mention  
 the <sup>positive</sup> effects of Cold upon different parts  
 of the system.

1 On the Arterial system it produces  
 debility and excitability. It <sup>while it</sup> appears  
 to ~~weaken~~ the <sup>existing</sup> fibres, it seems  
 to increase the cohesion of the simple  
 fibres of the body. It disposes to all  
 kinds of fever, even Intermitting.



2  
V This argument to be true, should ~~be~~<sup>be</sup>  
reciprocal in its influence upon the master  
as well as the slave, for the effects of cold  
are the same upon the wills of each of them.

+ a stimulating power in cold, but this  
is not the case. The pain is the effect of  
the ~~as~~ reaction of the system to such a  
degree as to produce morbid excitement in  
the part affected. In some instances the heat  
of the body ~~is attracted~~<sup>is repelled</sup> to the cold part w:  
so much force in order to equalize itself  
that it becomes the cause of that morbid  
excitement & pain. It even produces infl  
inflammation in some cases. ~~caused~~ By



2 It produces languor & indistinctness  
to motion in the ~~muscles~~ organs of vo-  
luntary motion, - hence some writers  
have said that the inhabitants of  
cold countries ~~are~~ like those of warm,  
were made to be slaves. - having no  
wills to ~~move~~ <sup>stimulate</sup> themselves to exercise, they  
say that they should be stimulated  
into action by the wills of <sup>a master.</sup> ~~the people.~~

3 It ~~dulls~~ <sup>affects</sup> ~~sensation~~ in the nervous  
system, ~~but~~ when very intense, <sup>with</sup> ~~it produces~~  
~~a~~ pain, in the ~~head~~ - Sleepiness &  
death. <sup>whether excited, in the head or limbs</sup> ~~This Pain~~ has been ascribed to +

4 It invigorates the appetite, especially  
for animal food. Horses eat more  
in cold than in warm weather. The  
stimulus of aliment serves to



The long application of cold, possibility is  
so far destroyed that wounds upon the  
soles of the feet from broken glass ex-  
cite no pain. This has been noticed  
by Meade in his travels to the north  
extremity of our country.

✓ Hence it is said to be stimulating - but  
the stimulus is from other causes to  
obviate its debility. It frequently  
increases the secretion & flow of  
urine - hence Dr. Sydenham's  
mode of using it. —



counteract the debility induced by

the cold. It even ~~coverts~~ awakens appetite in the middle of the night - in hot climates.

5 It weakens the Venereal Appetite.

Perhaps this Languor in this appetite may arise from the reflection of the difficulty of <sup>supporting</sup> ~~subsisting~~ children in a country where provisions are less abundant than in warm countries.

6 It renders sweating difficult, and uncommon, but when so moderate as to prompt to exercise - it promotes insensible perspiration. It produces a dark color in the skin.

7 It is unfavourable to vision, but this is probably owing to its being generally accompanied with <sup>the</sup> reflections of the rays of light from the snow.

8 Cold debilitates the faculties of



9 v It is said to ~~dispose~~ produce the  
Scurvy. This <sup>disease</sup> depends partly on  
weak solids, & partly on vitiated  
fluids. If the want of sufficient  
exercise may weaken the solids, &  
an undue proportion of animal  
food may induce a morbid acrimony  
in the fluids - But other causes to be  
named hereafter must cooperate w:  
Cold to produce the Scurvy.† [go to x p 66  
& proceed to ~~ps~~ ps: 68.]

+ 10 Cold  
~~There remains, one ~~more~~ effect~~  
~~of Cold upon the body to be men-~~  
~~tioned in this place, & that is, ~~after~~~~  
~~that degree which~~ by  
induces palsies, ~~the~~ contracting of  
the vessels; ~~the~~ it produces a



the mind, but this is probably owing to the languor it imposes on the body. v

= These are the ordinary effects of  $\text{L.D.}$ .  
 But when it is ~~pre~~ <sup>successes the</sup> ~~pre~~ <sup>interpose</sup> ~~pre~~ <sup>by</sup> ~~pre~~ <sup>heat</sup> it  
 generally ~~becomes~~ <sup>becomes</sup> heat of summer  
 always ~~pre~~ <sup>pre</sup> ~~disposes~~ <sup>disposes</sup> to a ~~remote~~ <sup>remote</sup> cause  
 of inflammation. ~~fever~~ - it generally pro-  
 duces a train of bilious & febrile  
 diseases. - I have twice seen several  
 hundred people indisposed in our  
 city from ~~the~~ <sup>weather</sup> cold ~~nights~~ <sup>as</sup> coming  
 on in a single night in the month  
 of August. The difference in the  
 Thermom<sup>r</sup> in a few hours was  
 from  $20^{\circ}$  to  $30^{\circ}$  - The ~~pre~~ <sup>pre</sup> ~~heat~~ <sup>heat</sup>  
 Now shall we account for the  $\text{L.D.}$  acting  
 so differently here from what it does in



redness in the skin. This is the  
effect of such a deadness induced in  
the cutaneous vessels by the cold, that  
the blood rushes into them and  
forms ~~these~~ effusions similar to  
those which precede gangrene, or  
petechiae in <sup>hence persons are pale - then red - then blue to cold.</sup> ~~maligant~~ <sup>severe.</sup> ~~fevers.~~  
<sup>head drinking & anger having the same effect.</sup>  
Cold in its a higher degree produces  
gangrene, or in other words total disorga-  
nization. ~~See below~~ ~~go to p. 56~~ ~~on to 56~~

Nothing more happens here than  
what ~~has~~ occurs ~~is a state~~ when direct  
debility is induced by the sudden  
abstraction of any other stimulus.  
Eg: - loss or ~~loss~~ of blood - the same  
quantity abstracted gradually produces  
neither convulsion or syncope.

12 ~~Little~~ cold induces not only the  
frost of plants, but of animals. The same  
is seldom more than 4 feet high. 13 Old  
loss blood from cold. I shall conclude this head



the native of a hot climate who visits a  
 cold one? - I answer, that the duration  
 of previous heat, (being only for a single  
 summer) is too short to produce insensibility  
 in the sentient extremities of the nerves, -  
 on the contrary it rather produces a proter-  
 -natural <sup>sensibility</sup> ~~excitability~~ - and some tone <sup>ch. tone</sup> ~~is~~ <sup>which</sup> is easily al-  
 -tracted by the sudden action of the cold,  
 the cause of that degree of  
 -hence ~~uncommon~~ debility which is  
 succeeded by  
~~attended with~~ pain - & hence a fever from  
 the slightest irritating cause such as  
 motion - or perhaps even thinking after-  
 -wards. ✓ Much is ascribed in these  
 cases to a sudden obstruction of the  
~~It may have some~~  
~~perspiration~~ ~~It is doubtless its effect,~~  
~~but it is the cold which acts by destroying the~~  
 Perhaps its action <sup>on</sup> the pores may be  
 the existing cause of the fever, - or perhaps  
 the cold acts only by destroying the <sup>system</sup> ~~equilibrium~~ of the  
 system.



by <sup>more Disease, & more</sup> smothering that there is <sup>more</sup> ~~probably~~ Animal  
<sup>& more Disease</sup> suffering from Cold, than from any other  
evil that afflicts the world. ~~The whole brute~~  
~~animal creation~~  
groans with ~~man~~ under its effects upon  
sensation, health & life. Who can calculate  
the sufferings of Sailors, Soldiers & the laboring poor  
from ~~being~~ out of doors, and from the want of fuel &  
clothing within doors? But - the sufferings of animal,

✓ Pontoppidan gives us the same  
Account of the <sup>influence of the</sup> climate of Norway  
upon the human body, ~~He~~ says:  
inflammations are uncommon there  
in the winter. - The month of Dec<sup>r</sup>  
1798 very cold & very healthy.

+ nature do not end here. ~~the whole~~ <sup>perhaps</sup>  
~~hundreds of thousands~~ <sup>many thousands</sup> ~~of animals~~ <sup>of animals</sup> ~~die~~ <sup>die</sup> ~~of cold~~ <sup>die of cold</sup> every year, &  
& Birds ~~may~~ <sup>die of cold</sup> the whole brute creation  
in cold climates, groans with ~~man~~ <sup>under</sup> its  
painful <sup>& distressing</sup> effects upon sensation, health  
and life. The diseases from Cold are more



weather uniformly cold is gener-  
 ally healthy. The most healthy winters  
 I have known in Philada have been  
 the coldest. I first observed this in the  
 year of 64, <sup>when a student of medicine,</sup> and have witnessed it twice  
 since. Diseases of all kinds <sup>looked up</sup> are ~~seen~~  
 as it were <sup>known</sup> in Canada during the winter,  
 unless once in many years when the  
 air is thrown by a visit of warm wea-  
 ther. Dr. Guthrie speaks in high  
 terms of the health & pleasure w.  
 reign in Russia during the winter.  
 Even the Catarrh (the constant  
 attendant of our variable winters)  
 is unknown during the cold weather  
 of that northern country. The return  
 of Spring <sup>in these cold countries</sup> generally produces fevers



numerous, than from any other cause.  
It is ~~remote~~ at times a remote - ~~and~~  
predisposing - or an existing cause of  
nearly all fevers, and however strange  
it may sound it is more so in warm  
than in cold climates. The night air  
in the ~~Sea~~ Egypt - and the East & West  
Indies awakens into action the mias-  
mata which produce nearly all the  
plagues - & yellow fevers & liver com-  
plaints of those countries. In short  
there exists not a greater enemy to  
the health & life of man than cold.  
go to p 66 #



but these fevers are of a peculiar  
 kind. They are ~~by no means~~ <sup>unlike the common</sup> in-  
 flamm<sup>y</sup>: ~~the~~ fevers of middle lati-  
 tudes, and in many seasons they  
 rapidly <sup>in the</sup> ~~are~~ <sup>gangrenous</sup> of a putrid nature. ~~How~~  
 shall we account for this? I an-  
 swer, that the arteries by being  
 long under the pressure of the redaction  
 action of cold, lose that elasticity,  
 and excitability <sup>which is the foundation</sup>  
 of inflamm<sup>y</sup> action, and which is  
 left to be destroyed or suspended  
 in climates where the action of the  
 cold is of a more transitory nature.  
 In the diseases of cold climates, as  
 well as warm, we see are generated



or.  
V You will please to mark here  
the difference between the short &  
long application of

V - Hence we find the inhabitants  
of Iceland & of other cold countries bear  
the heat of a Vapor bath <sup>at</sup> ~~at~~ <sup>of</sup> nearly 200°  
without feeling any painful sensations  
from it; and

H The relative effects of cold are fur-  
ther evinced by certain animals perish-  
ing in a degree of cold in the fall,  
which revives them in the Spring. In  
the former season the excitability of their  
systems is exhausted by the previous heat  
of summer - in the latter it is accumu-  
lated by the previous cold of winter. I  
marked <sup>formerly that</sup> the body suffers much less in passing from  
extreme heat to cold, than from extreme cold to heat.



in one season, & brought forth in  
another. ~~V~~ H

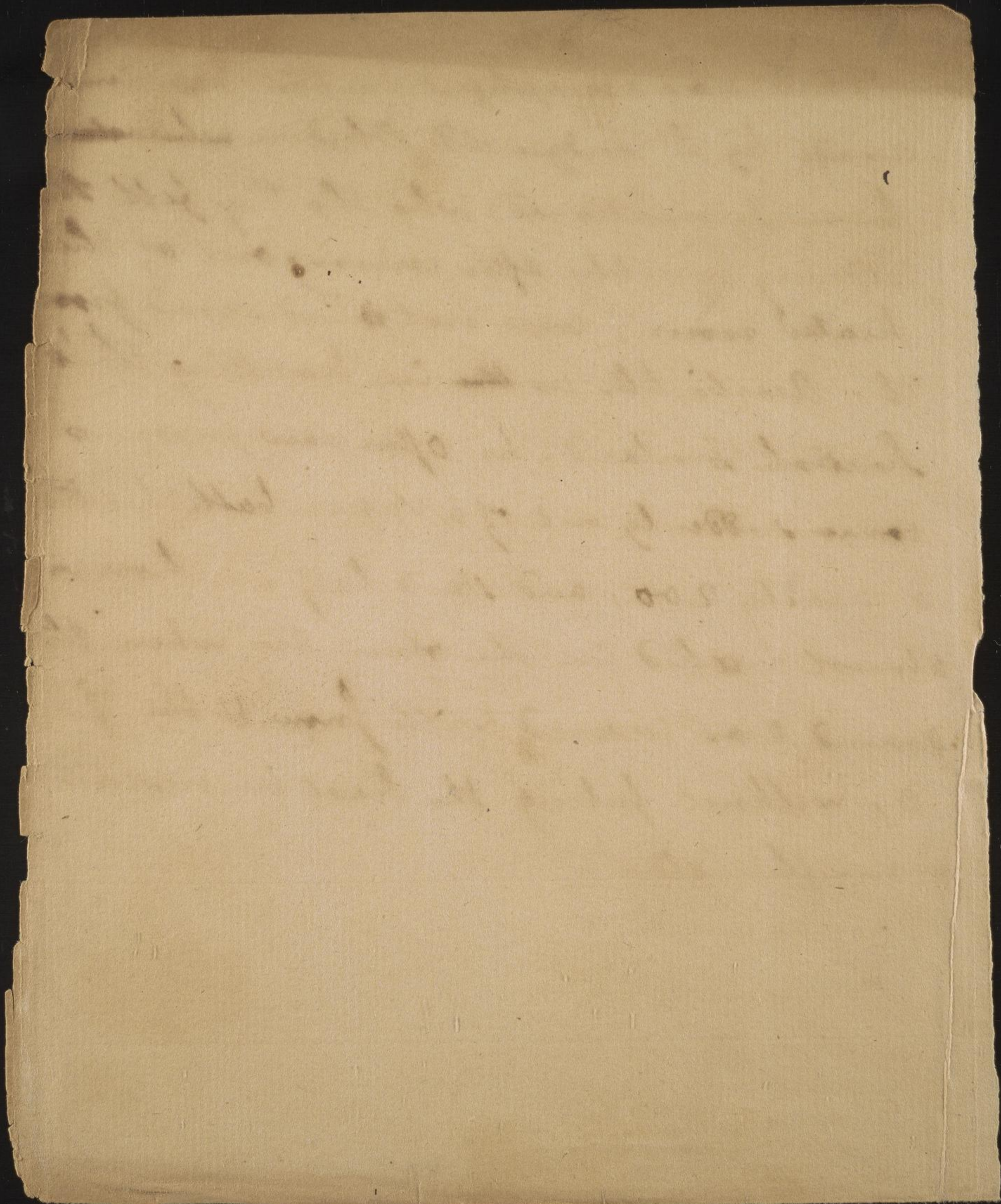
Cold produces  
~~It~~ <sup>After</sup> a while the  
 same insensibility to heat, that it  
 does to itself. <sup>see opposite to p 55.</sup> Hence we find the Na-  
 tives of Europe bear the heat of the  
 West Indies much better than the  
 natives of the Islands. This insensibi-  
 lity to heat, is only to be acquired by  
 the long action of cold, alternated  
 with little heat, on the system. In  
 a Climate like ours, we lose the  
 insensibility to cold contracted by a  
 single winter, by each succeeding  
 summer. The man therefore who  
 attempts to fortify himself against



to do.

This was exemplified in the Experiment  
made by Dr. Hodge & Dr. Blayden ~~who~~  
formerly mentioned, who tho' they felt the  
cold very sensibly after coming out of their  
heated room, were not ~~at~~ indisposed from  
it. Aarbi tells us ~~that~~ in travelling thro'  
Swedish Finland, he often saw persons  
come suddenly out of a vapor bath heated  
to nearly 200, and stand half an hour  
almost naked in the open air when the  
ground was covered with snow, & the ~~blue~~  
0, without feeling the least inconvenience  
from the cold. — ©







✓ You will please to mark here  
the difference between the short and  
long application of heat & cold to  
the body, ~~the~~ when succeeded by each other.  
Cold succeeding the application of heat to  
the body for a short time, produces fevers  
coleras &c - But when it succeeds the  
long application of <sup>heat</sup> it - it produces scarcely  
any effects on the body, & is less visible  
than in other circumstances of the  
system <sup>from causes formerly mentioned, viz exposure</sup> - Again - heat succeeding the short  
application of cold, produces inflamm:  
fevers - But when it succeeds the long  
application of cold for 5 or 6 months it  
produces fevers of a <sup>chronic</sup> ~~remittent~~ or  
<sup>gangrenous</sup> ~~putrid~~ type. ~~It would seem as if~~  
indirect and direct excitability were  
alike destroyed by the long continuance



the cold by <sup>light</sup> ~~thin~~ clothing, will  
have his work to begin & do over  
again every winter. If he <sup>should</sup> acquire  
his long sought for insensibility <sup>to</sup> it  
cold, it will be in the same way that  
a farmer taught his horse to live  
without eating. As soon as the poor  
beast became perfectly inured to his  
new discipline, — he died. ✓

The numerous & morbid effects  
of cold ~~like those of heat~~ are not  
necessarily connected with a vicinity  
to the poles. On the contrary — health  
and long life appear to be as com-  
mon in cold countries as in  
warmer, where men live agreeably  
to reason. ~~It~~ Where life is contracted,



of debility / = supposes that more  
people perish from the morbid  
effects of cold succeding to heat, than  
from the plague. This opinion is supported  
by many other authorities. Dr Mosely says  
"however paradoxical it may appear Cold  
is the cause of almost all the diseases of  
hot climates, to which alone climate is  
accessary." 10:71. He adds further as a rea-  
-son for this, that every person being weak  
from heat is under a predisposition to  
disease from cold.



Sir John Temple says it must not  
 be ascribed to cold, but to the excessive  
 Use of those stimuli such as Ardent  
 Spirits, - Animal food - & dancing,  
 which are all used to counteract it.  
 - In ~~Canada~~ <sup>the</sup> where winters are ~~short~~ <sup>long</sup>  
~~and~~ <sup>and</sup> very ~~cold~~ <sup>cold</sup>, there are in  
 many countries, such provisions  
 made against it as that it becomes  
 the pleasantest season in the year.  
~~Thick~~ <sup>Thick</sup> walls, - double windows  
 - and stoves ~~as~~ <sup>at home</sup> - and  
 fires and footstoves <sup>in the open air</sup> ~~as~~ afford an  
 ample protection from the cold in  
 Canada and Russia. This is so much  
 the case, that Dr. Genthrie tells us  
 that the Russians complain <sup>very much</sup> ~~little~~

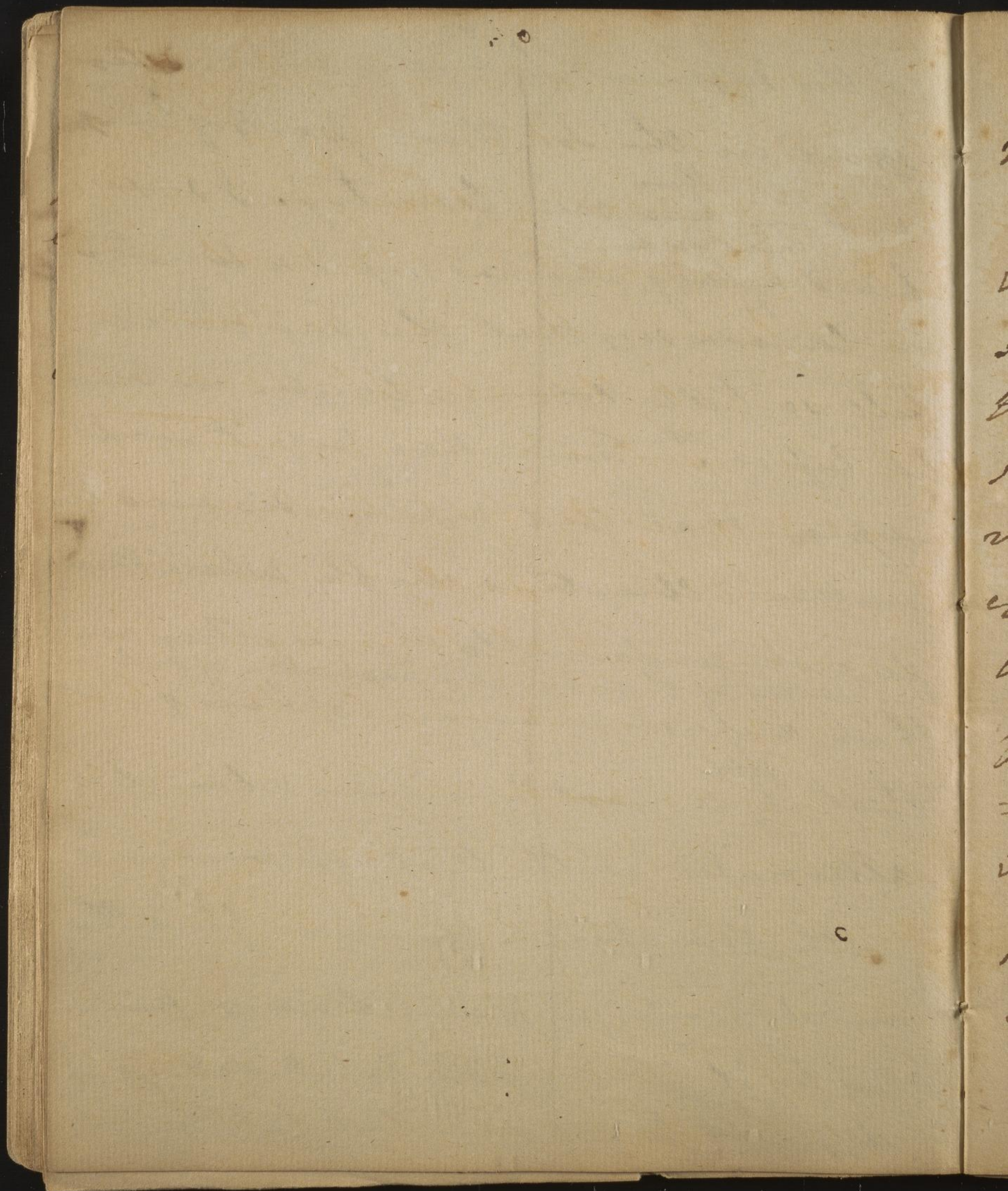


✓ In that country the effects of cold  
are obviated by stoves which pervade by  
means of pipes every room in the house -  
- by double glass windows - and by being  
enveloped in <sup>warmed</sup> furs, when they exposed  
themselves to the air.



of the difference between a winter  
 spent in the Southern parts of Europe  
 and in <sup>their</sup> own country.. I once  
 heard a lady who had passed a winter  
 in Canada say that she had never  
 felt so little cold in a winter in her  
 life before. — From these facts it would  
 appear, that cold produces diseases in  
 northern countries, chiefly where men  
 do not conform to the weather in  
 the structure of their houses, <sup>in the</sup> application of fuel in  
 their dress or manner of living, &  
 that <sup>cold</sup> it is most injurious when it is  
 alternated with heat, or combined  
 with moisture. Hence we find the  
 most acute inflamm<sup>y</sup> diseases produc-  
 -ed by it in middle latitudes. It is  
 difficult to say in what latitude, it

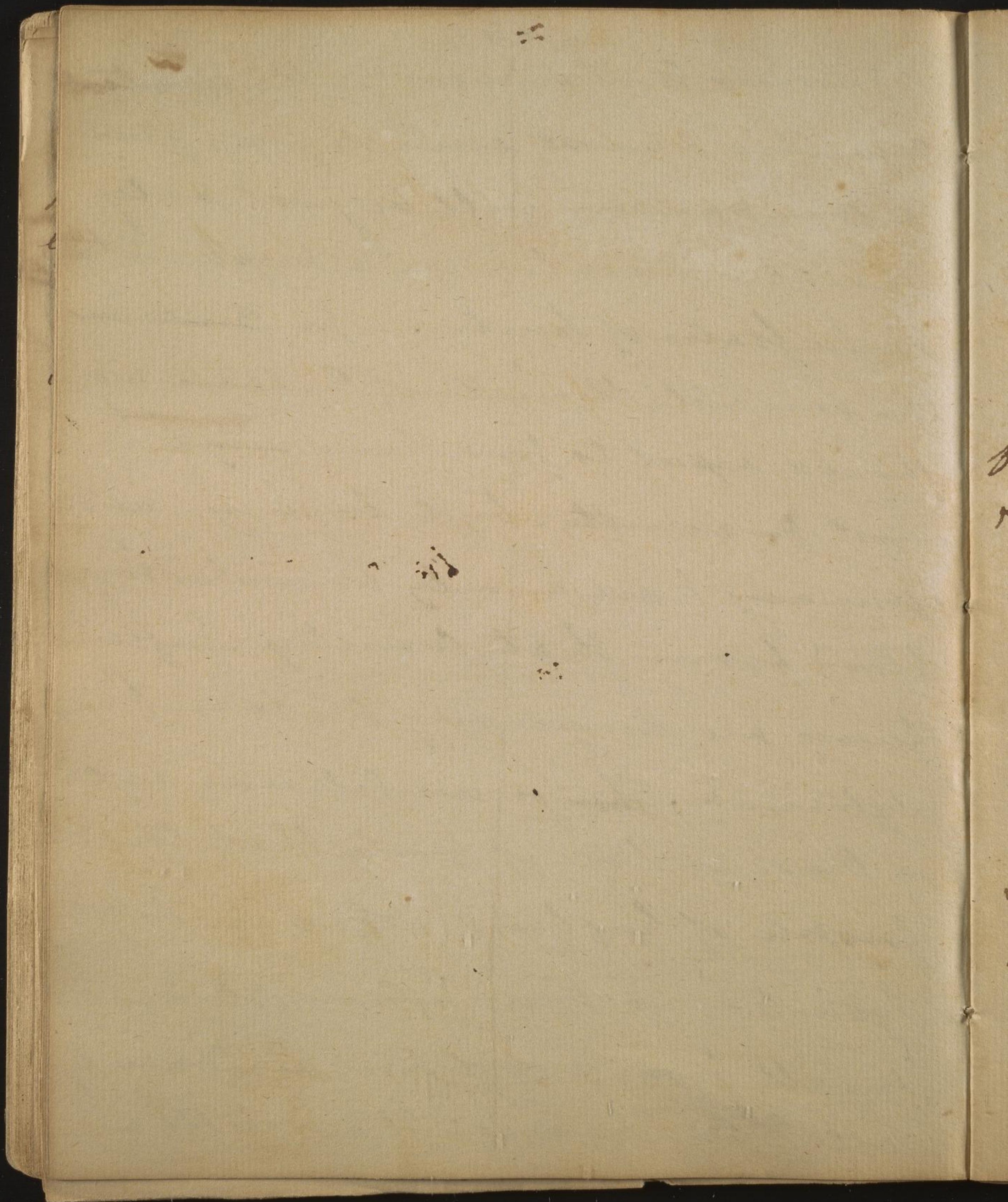






produces these diseases in the greatest  
 number & most acute degree, for  
 a comparison will be just only  
 when it is made between a people in the  
 same states of society. — In Britain  
 the variable climate of Britain we  
 should expect to find them ~~very~~<sup>great</sup>  
 most frequently, but luxury — and  
 effemacy have nearly banished  
 blood from that country. Influen-  
 zers are as yet very acute in Penn-  
 sylvania, ~~therefore~~ our citizens are  
 in the same state of society that the  
 people of England were in Dr.  
 Sydenham's time, when Bleeding  
 small beer, & cool air cured nearly  
 all their diseases. If our fellow







83

Citizens on the Potomac, & even  
in the States beyond it, do not bear  
bleeding as plentifully as we do, I  
~~we are disposed~~ am disposed to ascribe it to their more  
indolent and luxurious mode of living,  
for in more southern climates the  
free use of the  
lancet is the only remedy for ~~the~~ the  
diseases of cool weather. Dr Hecchover  
told me Drew let than <sup>from 7'6 to</sup> 320 at a time of blood in  
a pleurisy in Minorca. Dr Quier  
says that nothing but copious Ph.  
cured the pleurisies of <sup>the negroes in</sup> Jamaica were  
in those cases where the pulse was  
scarcely perceptible. & Dr Hoorn informed  
me that after a north west wind,  
the diseases in <sup>pleuro-inflamm<sup>y</sup></sup> fevers of  
Louisiana required as  
plentiful bleeding as the diseases of



✓ The climate therefore of middle latitudes is not comparably unhealthy, - even the frequent changes according to Dr Huxham may be considered salutary. It only requires more care & the exercise of more reason to enjoy health in such latitudes than in less variable climates.

Dr Sydenham's remark - nearly all fevers from neglect &c in beds: -

+ too a man died in cold at 81 or 9° below 0 - when asleep - who lives when awake & in action <sup>in a degree</sup> where the cold is at 30° below 0.

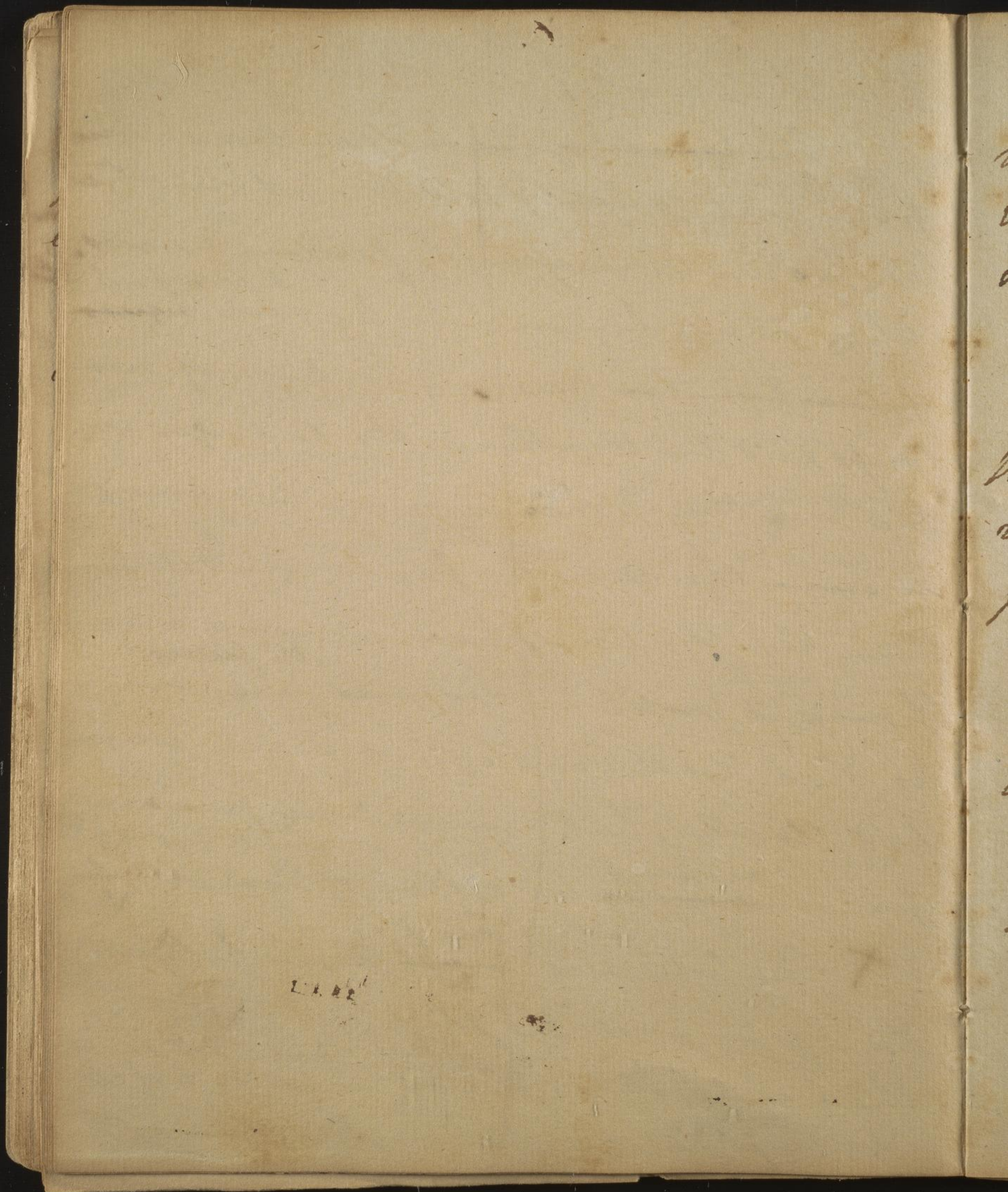


this country -

The effects of the sudden transitions of the air from heat to cold, & cold to heat on the body, do not necessarily produce diseases. - They may be prevented by <sup>a careful</sup> degrees of caution in accommodations of our dress and bed cloaths to the changes in the weather. This is more necessary in summer & autumn than in winter. I have known many thousand people indisposed <sup>with fevers</sup> from wearing too thin cloaths or sleeping under too few bed cloaths, but never one person from <sup>an excess</sup> ~~wearing~~ in either of those articles. go on to + p: 68

\* The cold acts most powerfully on the system in the sleeping, than in the waking state. Hence <sup>the foundation of</sup> ~~the~~ fever is laid in the night, & hence it







Cold acts more powerfully upon the body when ~~the~~ <sup>the</sup> stomach is empty than when it is full of Aliment - hence famine and frost frequently go together in sailors who suffer from shipwreck.

Old people suffer more from the cold than persons in middle life. Hence the reason why they are so often found paralytic, or dead in their beds in very cold spells of weather.

Cold acts powerfully upon persons addicted to the use of spirituous liquors. <sup>too well</sup>

Hence the reason why they often ~~quit~~ <sup>quit</sup> the bills of mortality in the winter ~~their lives to a cold night or~~

months. Three notorious drunkards

~~have~~ died in our city in the course of the last few weeks. <sup>Two</sup> of them during the coldest week in ~~last~~ <sup>the winter of 1791-2</sup>




✓ fact of Lake Superior by 3 - never  
frees - vapor - frees in the air & cuts  
the face. See p: 88. of 4<sup>th</sup> Ann: 1846.



~~nameth~~ ~~Jan: 1792~~, & all with  
<sup>originating from</sup>  
 great Diseases of great debility. Durn-  
 -bards are generally chilly, when not under the  
~~Children~~ ~~from the vigor of~~  
~~their~~ ~~from the~~ of strong drink.  
~~the stimulus strong~~ Cold acts but  
 feebly upon Children, from the vigor  
 of their stimuli. I have heard of an  
 Indian woman being found frozen  
 to death ~~but~~ with a living Child on  
 her back. — return to = p: 36. —

+ Moisture increases the sedative  
 effects of Cold by conveying off more  
 of the heat of the body. ~~The~~ The Cold of  
 Great Britain at 30° is much more  
 disagreeable than the Cold of Pennsylv-  
 -vania at 10°. The Russian sailors  
 who spent part of the winter of 1778  
 at ~~Hydra~~ Portsmouth declared that



‡ The air of Holland owes its unhealthy quality to its moisture. This is so great in the evening & at night as to make the Dregs of winter necessary in midsummer. - Dr Traubner denies that we take cold from moisture even from sleeping in wet sheets - but this is contrary to <sup>reason</sup> all ~~very~~ observations. 

✓ The cold hand of a physician will often produce a short rigor in the whole body of a patient, & I know a gentleman who ~~labours under~~ is subject to a cough, who can excite a fit of coughing at any time in the night only by putting his hand out of bed. Gollymer.

‡ There <sup>was lately</sup> is an old man in this city of the name of Godfrey Wiltren who can predict the approach of serenity, that is rain, in the atmosphere by a sickness at his stomach. A similar fact is related by Dr Darwin, <sup>many</sup> Birds ~~probably~~ have this sympathy with



69

moist  
the cold of England was far more  
distressing, & insupportable than the  
coldest weather they had ever felt in  
Ruscia. — †

Cold acts more or less certainly,  
~~upon the body~~, according as it acts on  
the whole or a part of the body, or upon  
a part which has been confined from,  
or exposed to the action of the Air.  
— Cold feet often produce Catarrh - Colic  
and even palsy & Apoplexy. A current  
of Air against the back often produces  
tumor & stiffness & inflamm<sup>n</sup>. in that  
part of the body, and <sup>or in other words a trismus</sup> I once knew a  
young woman who caught cold only  
by leaving off a ribbon which she  
usually wore on her cap. The Abstraction  
of Stimulus in a part, cold in these



~~I told inducing gangrene on the  
limbs. How? - the remedy - accom-  
-modated to irritability I.~~

approaching rain - hence the peculiar  
<sup>& motions</sup> Noises they utter before ~~it~~ it comes. Ducks  
seldom fail to indicate wet weather by  
rising from the ground & clapping their  
Wings. This sympathy natural to birds  
is acquired in many Chronic Diseases to  
all the changes in the weather in the  
human Species. It is a kind of ~~superadded~~  
sense. ~~go to p 71.0~~ In health we have a  
sensation of an approaching fall of snow.  
- Hence the common saying - "It feels like  
snow." go to p 71.0



cases, excites the action of other stimuli  
to restore the equilibrium of <sup>the</sup> system.

The fever is the effect of too much  
action for ~~this~~ purpose. It is from

having so often seen the ill effects of cold

but - that I seldom give any advice

in a chronic disease, that I do not

charging my patients to keep their

feet <sup>the organs of</sup> warm - for by the feet & the mouth,

I believe we receive 9 out of 10 of all

the diseases to which the human body

is exposed. —

Thus far having we viewed the effects

of heat and cold, in their simple <sup>states</sup> ~~and~~,

and combined with moisture.

~~Let~~ The same degree of cold are

more sensibly felt in windy than

in calm weather - owing to the



positive & relative  
✓ The effects of heat and cold are very dif-  
-ferent in sickness from health, & vary  
according to the stages & states of diseases. of  
this hereafter. ~~turn back to~~ They not  
only suffer from this pressure, but  
they have a persuasion of this approach.  
turn back to p. 69 #

U Thus in the winter they dispose to  
diseases of the head - in the spring to <sup>diseases</sup> the  
lungs, and in the summer & autumn to  
the alimentary canal. <sup>the actions</sup> These ~~persons have~~  
of the seasons on <sup>health &</sup> ~~human~~ life have been  
compared to the different stages of human  
life. ~~winter to~~ The winter has been compared  
to the infancy - spring to youth - summer  
to manhood - & autumn to old age.  
It is remarkable the diseases produced by  
each, are the diseases of those 4 stages of life.



Wind carrying off the insens heat of  
 the body discharged with the insen-  
 -sible perspiration. I think I have  
 oftener known Catarrhs & other in-  
 -flam<sup>d</sup> affections induced by windy  
 than calm cold weather. — V

Thus far have we examined the  
 effects of <sup>the air</sup> ~~heat & cold~~ upon the body,  
 as far as they relate to their sensible  
 qualities. But they both act differently  
 in different seasons. <sup>U</sup> Again heat & cold  
 act differently in  
 different months in all middle  
 latitudes. — They act differently in  
 towns ~~and~~ countries — in cultivated  
 & uncultivated countries, but this de-  
 -pends <sup>in part</sup> on the combination of the  
 air with certain ~~seasons~~ evolutions.



~~V. Bring in winds from all quarters in  
diff countries & their influence on health next  
year.~~



It therefore will come in <sup>under</sup> our next  
 head. I shall only mention the effects  
 of the sensible <sup>qualities</sup> effects of the air in  
 different <sup>seasons &</sup> months. ~~In some~~ In one of  
 the seasons, the air is rendered <sup>unhealthy</sup> ~~more~~  
 by mixture <sup>th</sup> w. exhalations. This shall  
 be mentioned in its proper place.

① To exhibit the influence of seasons  
 and months in a climate nearly similar  
 to our own, I shall furnish you w:  
 an Extract of a Journal of the deaths  
 in the Parish of St Nicolas in Boulogne  
 on the Sea <sup>in the lat. of 50°</sup> between the years 1776 and  
 the year 1783. It is taken from D<sup>r</sup> Daignan's  
 tables of the variety of human life - a  
 curious & interesting work lately put  
 into my hands by Mrs Jefferson <sup>during his residence in this city.</sup> I shall  
 first give the amount of all the deaths



v the same taken notice of by Dr  
Heberden Junr in London. in his work.



in each of the seasons that ~~were~~ are  
included in the above mentioned seven  
years. In ~~seven~~ the winters 365 - In the  
Spring ~~summers~~ 292 - In the summers 277.

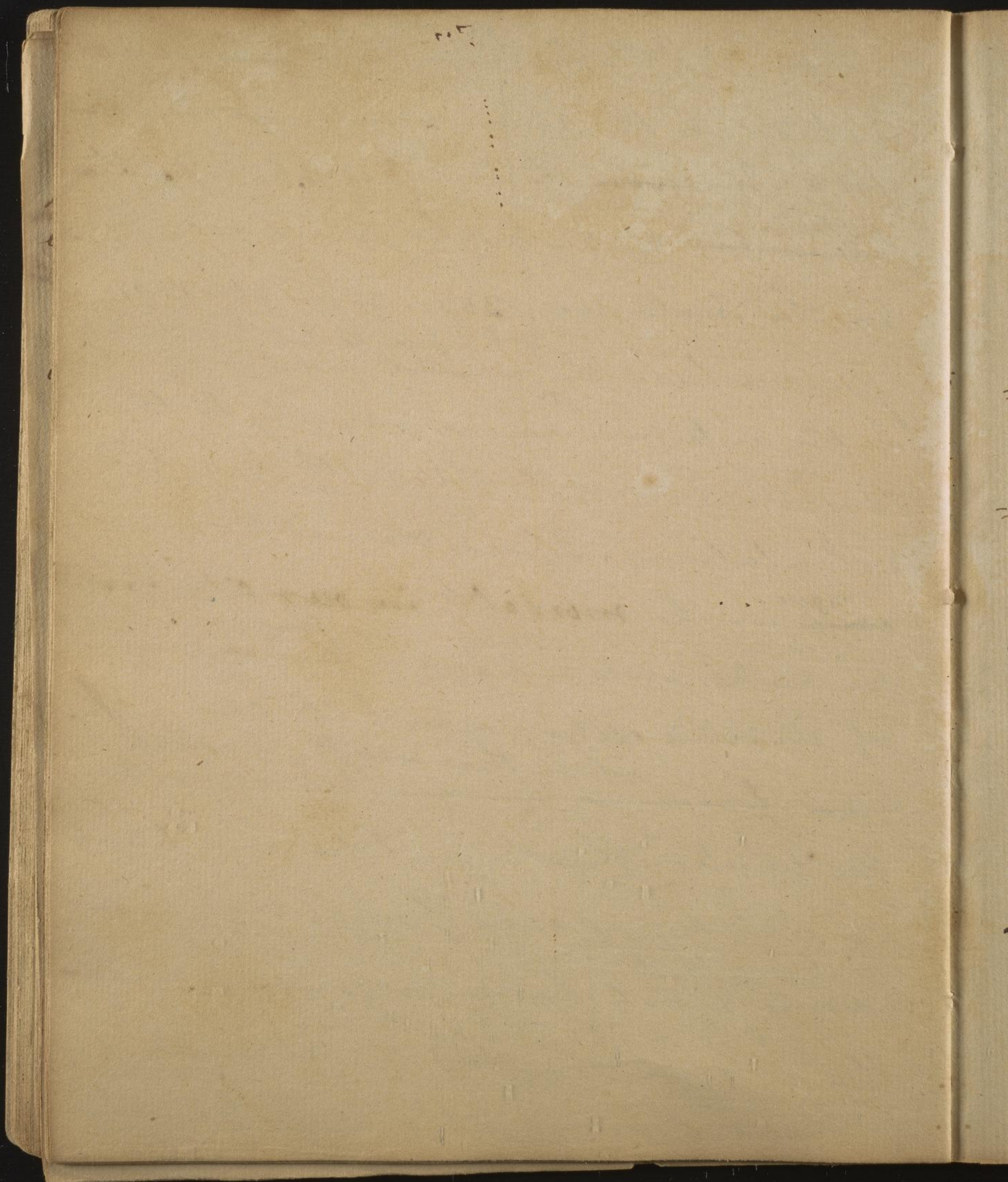
In the Autumn 357. — in all 1291.

you see here the <sup>2nd degree of</sup> ~~greatest~~ mortality is  
in the Autumn - owing probably to the  
combination of the Air with morbid  
exhalations. I have observed the same  
<sup>degree</sup> ~~excess~~ in the mortality in our city in  
the Autumn - and from ~~this~~ <sup>the</sup> mixture  
of morbid effluvia with the air. — The  
next season <sup>which there was the greatest</sup> ~~in~~ the number of Deaths is  
the winter. This is unlike our Climate

in ordinary years. I suspect some ~~epi-~~  
~~demie~~ <sup>from contagion</sup> must have cooperated with

the cold in some of the above winters.  
— The Influenza - the Measles - and







74

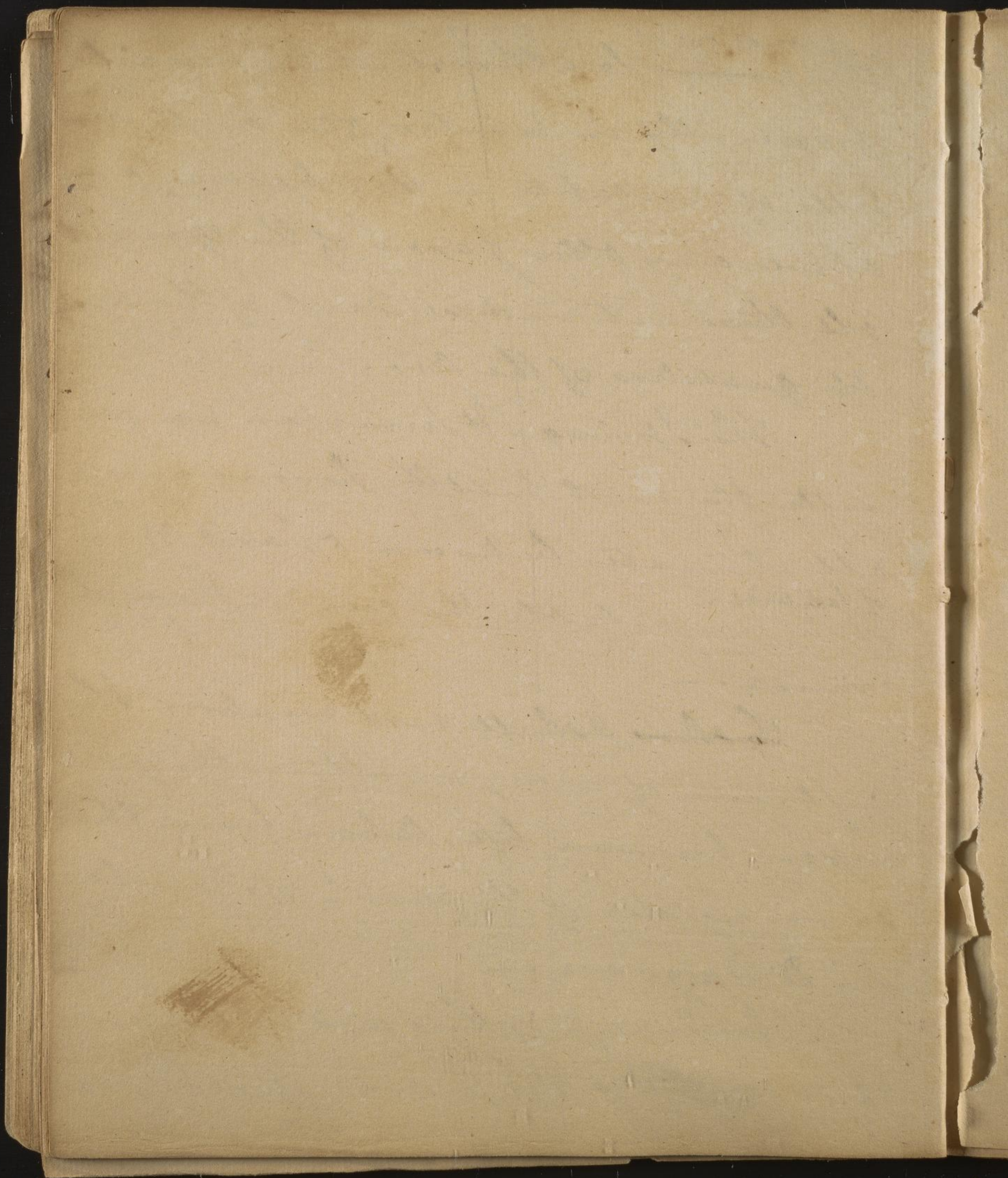
the <sup>malignant</sup> ~~pestilence~~ fore throat which prevail  
frequently in winter, often swell our  
bills of mortality in that season far  
above any other season of the year, but  
all these act independant of the vari-  
-ble qualities of the air. —

The Spring & Summer are gene-  
-rally the most healthy seasons in  
all climates between 50° and 35°. —  
of latitude.  
It is remarkably the case in Pennsylv-  
-vania. —

~~Therefore~~ I shall next mention the  
influence of every month in the year  
upon human life, taken from the  
same register of the parish of St Nicolas  
by Dr Daignan. —

In January there died in the course  
of seven years 142 persons, of whom







From a review of the influence of the weather in each of these months, it appears that the most richly of them was Jan. - This is not common in the middle states except from Epidemics - or except in open winters. The principal mortality in this month when intensely cold is among old people and persons previously debilitated by Ardent Spirits. - Feb. and March appear to have been very richly, nor did the mortality abate much in April. ~~There~~ The weather in these months is very variable, and often proves fatal to chronic patients especially to persons afflicted with the consumption. The inflamm<sup>d</sup> diseases produced in these months



V Hippocrates expresses the same  
idea in other words. He says that  
the diseases of winter are seldom  
cured till midsummer, & the disca-  
ses of summer ~~are~~ seldom cured  
before the middle of winter. Van-  
~~der~~ ~~an~~ ~~important observation~~ = <sup>Priscian</sup> says  
~~the best~~ the time in <sup>the</sup> w: ~~some~~ feverish.  
begin as at the vernal & autumnal equinoxes,  
but that they are antedated, & ~~postposed~~ <sup>postposed</sup> by  
the weather - hence the former <sup>sometimes</sup> appear in Feb:  
& the latter early in Sep? - They are according to



seldom prove fatal in our climate.

June and July are the most healthy months in the year. The same observation applies to the climate of Penn:

<sup>The latter</sup> ~~sylvania~~ <sup>end of July</sup> is sometimes fatal to children - but

I have uniformly observed June to be the healthiest month in <sup>in this city</sup> the year.

The ~~same~~ Dr Sydenham says that

the diseases of winter spend themselves in June - and the diseases of summer

in February. I believe there is a foundation for <sup>the same remark</sup> ~~this~~ remark in <sup>the middle</sup> ~~the middle~~ States of America <sup>over</sup> ~~except~~

- Most of fevers bear bleeding in May, and most of ~~the~~ the fevers of ~~the~~ Decem<sup>r</sup>: Jan<sup>y</sup>: and Feb: exhibit marks of the remitting & intermitting



Piguet most frequently antedated. Hence he  
says a medical Spring should begin on the  
12<sup>th</sup> of Feb. Summer on the 12<sup>th</sup> of May. Autumn  
on the 12<sup>th</sup> of August, and Winter on the 12<sup>th</sup>  
of November. —



fevers arise especially in discharges of bile. Now - according to this remark  
<sup>breathings of the</sup>  
 the month of June may be ascribed  
<sup>to</sup> to a kind of solstice in diseases. - They  
 seem to pause for a few weeks - but it is  
 only to <sup>ex</sup>change one set of destroying ~~in-~~  
~~struments~~ <sup>weapons</sup> for another. -

The month of ~~Sept~~ August is more sickly  
 by our table than July - 85 - The  
 proportion of deaths in that month  
 is much greater in our city.

The months of Septem<sup>r</sup> - Octob<sup>r</sup> and  
 Novem<sup>r</sup> are next to in <sup>their</sup> fatality mortu-  
 -lity to the winter months. This is  
 probably owing in part to exhal-  
 -lations, but much of it may be as-  
 -cribed to the contrast between the



✓ This air by its coldness & dampness  
~~renders riding in the night much~~  
~~more fatiguing than in the day time,~~  
~~for they both produce great direct debility.~~  
~~Mr Bruce speaks of the Damp Night Air~~  
~~after a hot day affecting even the mind,~~  
~~for he says the Sailors who condensed~~  
~~him up the Mill, always discovered strong~~  
~~marks of cowardice as soon as the chilling~~  
~~night air began to act on their bodies.~~  
~~Colds are more frequently taken by ex-~~  
~~-posure to the night air than in any~~  
~~other way. In Spain it is often caught~~  
~~by sneezing. Hence says Brydone it~~  
~~is gallant to make love in that country~~  
~~only in a hoarse voice. - The yellow~~  
~~fever is often excited by the night air~~  
~~than by any other cause -~~



dry & warm air of the day, & the cold  
 and moist air of the night. ✓ The  
 sickly and mortal season begins in  
 Pennsylvania about the 20<sup>th</sup> of  
 August. It is partly occasioned by  
 exhalations, but chiefly by the damp  
 evening air to which our citizens  
 expose themselves in their summer  
 dresses. The quantity of dew which  
 falls after this time is so great as  
 to resemble ~~the~~ a gentle rain. It fre-  
 -quently sets Springs which have  
 been dried up for six weeks a flow-  
 -ing. <sup>sideline up &?</sup> This vivacity generally  
 continues till the frosty <sup>nights</sup> come on,  
 Unless heavy rains should fall in  
 the mean while, for they both alike



~~✓ The evening air is <sup>very</sup> pure~~

✓ ~~The~~ Under the head of the sensible qualities of the air I mentioned its rarity & density.

Air highly rarefied such as exists on the summit of <sup>very</sup> high mountains ~~is~~ <sup>produces</sup> many disabling symptoms. It such as <sup>have</sup> great muscular weakness. ~~These~~ <sup>These</sup> persons in ascending them near their summits are often obliged to stop in order to rest. <sup>This</sup> ~~has~~ <sup>has</sup> often been felt on the Alps. Even the mules which ascended them were affected with a similar immobility of their limbs with men, and with great difficulty of breathing - panting, & the emission of plaintive cries. Saussure <sup>was</sup> ~~was~~ <sup>was</sup> walking on the summit of Mount Blanc in ~~Switzerland~~ <sup>Switzerland</sup> that he could not advance 15 or 16 steps without stopping to take



check Bilious diseases, - ~~the~~ and both  
in the same way by destroying morbid  
exhalations. ~~†~~ —

The table which I have read to you  
will furnish some very useful remarks  
on the influence of the ~~var~~ remote causes  
of diseases on persons of different ages,  
and conditions, but this will come  
in the place marked for it in our *tbl.*  
*-labras.* ~~Q~~ go to n<sup>o</sup> 3 new copy p. 1.

of marsh effluvia, These are a  
fruitful source of diseases. <sup>Three</sup> ~~Two~~ circum-  
stances are necessary to produce them  
viz heat and moisture & vegetable & animal substances.  
The heat to <sup>generate</sup> ~~be~~ <sup>so</sup> ~~intense~~, and



breath, the  $\frac{1}{2}$  at this time in the Barometer  
stood at 12 inches. ~~Other~~ effects of these great  
altitudes <sup>are</sup> a quickness of pulse - palpitation  
of the heart - sickness of the stomach - loss  
- thing of food - ~~on crossing~~ <sup>propensity</sup> great thirst, ~~but~~  
an aversion to spirituous liquors. All these  
effects of breathing this rare atmosphere go,

& nor was there as yet any quantity  
of vegetable matter on the ground ~~to~~  
putrefy, & mix <sup>to</sup> the animal matters.

+ off after resting a few minutes, but  
return with the least exertion. ~~all~~ These  
~~symptoms~~ have been attributed to a  
deficiency of oxygen in the upper regions of the  
air, and a <sup>more rapid</sup> consumption of it ~~beyond the~~  
~~proportion~~ the combustible matter in the  
blood - such as I said formerly constituted  
the <sup>impure</sup> air discharged by Respiration. In  
addition to the effects above mentioned,  
I ~~suppose~~ <sup>takes notice of</sup> two others viz  
Sleepiness, & great pain from the action



continued for some time. I said that  
moisture must be combined with this  
 heat, for the rays of the sun shall  
 nothing unwholesome from the dry

ground, nor from marshy ground when  
 it is <sup>completely</sup> covered with <sup>the same</sup> for a bed of water <sup>with 10 leagues in</sup> of  
<sup>Egypt.</sup>

So to show that heat is essential to  
 the production of miasmata, I  
 shall relate the following fact. Some years  
 ago the meadows below this city were  
<sup>in the month of April</sup> overflowed, and many animals as well  
 as fish were left dead on the meadows  
 after the recede of the river. In vain was  
 Sickness looked for after it - for Al-  
 yet there was not heat eno to pu-  
 -tify these animal matters, or to ex-  
 -hale them in the air. This fact was



of the Rays of the Sun shining directly upon  
the skin. +

~~The air is <sup>in its changes from different degrees</sup> so dense as to  
of density & rarity  
create great changes in the body, except it  
becomes sometimes disorders the body. Invalids  
are most sensible of it. Mulcaill a French  
writer ascribes a number of sudden Deaths  
which occurred at Phiviers in 1747 to a  
sudden <sup>diminution in</sup> change in the height of the air. Old  
The ~~air~~ <sup>it</sup> fell suddenly from 28 to 28.8 inches - <sup>gauge</sup>  
The ~~2~~ <sup>the</sup> ~~bars~~ <sup>bars</sup> fell suddenly from 28 to 26.8  
with a <sup>diminution</sup> of 1000 pounds of air. Old.  
that is ~~one~~ <sup>such</sup> Pains & Rheumatic pains  
are often made worse by a sudden <sup>diminu-</sup>  
-tion of its weight. - ~~Q. P. P.~~~~

+ Dr Baron Humbolt who ascended to the  
summit of the Jumbassaco, ~~the~~ <sup>high</sup> a brown  
-tain 20,000 feet above the level of <sup>in S. America</sup> the ocean, &  
of course the highest mountain in the world,  
the rarity of the air produced he informed <sup>me</sup>  
been <sup>rose</sup> ~~was~~ <sup>from</sup> his mouth & lips, a  
red <sup>ness</sup> of his eyes, Achne at his stomach,  
& a pain in his breast which continued



was communicated 82

Once proposed to me by the late Dr. Bond, but without the explanation of <sup>some</sup> ~~some~~ years ago, a similar fresh happened in those meadows in the month of May or June. From the full operation of heat at that time, & guided by the event of <sup>just mentioned</sup> the inundation in April I ventured to predict that no extraordinary freshness would follow, and the issue was agreeable to this opinion. many facts might be mentioned ~~to~~ to prove that exhalations from fluid bodies of water do not produce diseases. Mr Bruce ~~in~~ remarks in his travels that rainy seasons <sup>ch</sup> perfectly covered the low grounds were never unhealthy in one of the richly



81

✓ & Dazilles in his Account of the  
diseases of the negroes remarks that  
at Cayenne when <sup>there is much rain &</sup> the morasses are  
duly overflowed, the people are most  
healthy. But at St Domingo it is the  
reverse - When there is much rain,  
and no morasses, <sup>to</sup> overflowed p: 10

— several days afterwards. His pulse  
of cold was very great, altho' the  $\bar{F}$  was  
between 40 & 50 of Fahrenheit. By his  
indication the quantity of Oxygen was  
reduced to 19 parts in the 100. That of  
the fineness & softness of the snow. ~~then~~  
go to p: 82. 0 back to Op 82

~~In Women the variations of  
Baromet. in Town called merely  
the last p 3.~~

~~Air excessive in Density, [that is above 28] by  
compressing the lungs renders the reflux of the~~



Countries which he visited. In the Delaware state heavy rains by overflowing the low grounds have in one instance prevented a sickly fall. In the same season bilious fevers were common in the high grounds of Pennsylvania - for here the rain was only sufficient to produce miasma. Ditto in 1804 saw fever on Banks of Susquehanna but these general or local miasmas frequent. The sicknesses of autumn frequent. The same in 1806 - great Rains & Drought this U States healthy, & by depend on very slender circumstances, which if lightly attended to, lead to a conclusion that there <sup>are</sup> no fixed principles with respect to the generation and action of morbid ~~substances~~ <sup>miasmata</sup>. A summer <sup>which</sup> perfectly dries the low grounds & or perfectly covers them with water will generally be healthy. Superficial observations <sup>do not</sup> who consider heat & rain as



V I have said that heavy rains  
which cover the ground with  
water prevent exhalation, but  
I have <sup>from Dr Davidson in</sup> mentioned a case in which a  
my 4th Vol. of Inquiries  
heavy rain promoted exhalation,  
i.e. by destroying the green covering  
which had <sup>completely</sup> covered a pond of stag-  
mating water. ~~water~~

Rain on the west coast of Africa induced fever - perhaps  
from some cause. <sup>Dr</sup>  
It is remarkable that in 1844  
close swamps where there is no  
exhalation, there are no bilious  
or intermitting fevers. The access of the  
sun to these swamps is necessary  
to their producing disease.

It is most hurtful where salt and  
fresh water mix in the southern states.  
mellieat.



under relative circumstances, 84  
~~generally without success~~, would lead

from this to doubt the efficacy of both  
in producing diseases, and to ascribe

them to ~~the known~~ <sup>they know not what</sup> ~~not what~~ <sup>to malarious humors & other</sup> ~~causes~~ <sup>quality of the air, or to the fruits of</sup>  
or importation. It is only those  
the season, ~~they attending to moderate~~

degrees of rain w<sup>ch</sup> produce moisture, &  
those degrees of heat which do not sud-  
denly dry the ground, that ~~produce~~ <sup>generate</sup> the

effluvia ~~inasmuch as~~ <sup>ch</sup> produce bilious

and intermitting fevers. Fresh & salt  
water mixed in marshes most apt to produce disease.

= The matters which are exhaled are

of said to be <sup>formed from</sup> ~~of a~~ <sup>animal & vegetable</sup>  
~~matters~~ <sup>matter</sup>, but many facts <sup>prove</sup> ~~refute~~ it for:

= ~~believe~~ that they are chiefly of vegetable

origin. ~~They operate perhaps~~ <sup>are often combined.</sup>

but each acts separately, as I shall say directly. go to  
matters <sup>metaphysically</sup> in the neighbourhood

of towns without producing a single



Here enumerate them. from vol 4 of Enquiries.  
I have hitherto spoken only of marsh  
then go to B. H. p: 86  
miasmata as the remote cause of disease,  
but many vegetable <sup>& animal</sup> matters in a state of  
putrefaction produce the same effects. I  
shall briefly enumerate them. 2 Cabbage.

IV Semiar's facts, & Dr Johnson's at

Sourat in India 3 potatoes. 4 pepper  
5 Indian meal. 6 Onions. 7 mint. 8 bruised  
& Caraway seed in the hold of a ship. 9 Coffee  
Milled in 1793 & 1798. and in Jamaica in 1793.  
10 Cotton. 11 Hemp, flax & straw. 12 Carrops of  
an old tent. 13 Old books, old paper money.  
14 The Timber of an old house <sup>& huts in the 2<sup>nd</sup> year of standing.</sup> 15 Green  
wood. 16 green timber of ships. 17 Stagnating  
Air of Hold of ships. 18 D<sup>r</sup> Cellars. no cellar doors or  
& Chimneys best in them. 19 Bilgewater. Dr  
Rowley. Gutter - Dork - Sewers, water. 20 Air  
emitted by stirring ~~from~~ pond water. 21 a  
~~dead~~ dead  
dog & a Duck pond. 22 weeds  
near a house. 23 the Ocean. Dr Plank.  
are. 1 Human dead bodies. ~~in water~~ 2 Blo-  
-casts. 3 Raw hides. 4 putrid beef.



disease. Mr Howard tells <sup>us</sup> the bodies of  
persons who perished with the plague  
at Smyrna <sup>in one instance</sup> ~~often~~ putrefied in the open  
air without spreading the disease. The  
stench of these bodies he says passed <sup>this</sup> over  
the Governor's house in a certain  
direction of the wind. Neither human  
or any other animal <sup>always</sup> ~~are~~ un-  
friendly to health, - or Edinburgh & Madrid  
would long ago have been depopulated,  
~~and~~ <sup>would</sup> ~~would~~ <sup>long ere now</sup> ~~have been so removed~~  
from the neighbourhood of our houses.  
- but putrid weeds of all kinds produce  
fevers. Dr Rogers in his Epidemics of  
Cork <sup>describes</sup> ~~mentions~~ a fever from a putrid  
bed of cabbages. After all I think it  
<sup>most</sup> ~~most~~ <sup>probable</sup> ~~probable~~ <sup>that</sup> ~~that <sup>in</sup> ~~in <sup>animal</sup> ~~animal~~ <sup>matters</sup> ~~matters~~  
<sup>is</sup> ~~is~~ <sup>caused</sup> ~~caused <sup>with</sup> ~~with <sup>certain</sup> ~~certain~~~~~~~~~~



It is remarkable that in swamps  
where there are no exhalations people  
work & enjoy good health. -

5 It has a ~~putrid~~ <sup>malignant</sup> fever was lately prod.  
in Newbury port in 1796 by the effluvia of  
~~putrid fish~~ <sup>putrefying whale</sup> once prod.  
an epidemic fever in Holland.

What is the nature of these ~~putrid~~ <sup>malicious</sup> ~~fevers~~ <sup>fevers</sup>?  
miasmata? - From the efforts of fire  
& burning & in destroying them they  
have been supposed to be animated - or  
organic bodies. This may be the case, but  
it is not my business to decide upon this  
question. It is remarkable that mosquitoes  
and other insects abound with bilious  
fevers. - But later observations have  
taught us that is they contain  
a large portion of Hydrogen on  
which their action depends. -  
~~fevers~~ Bilious fevers which  
are produced by miasmata.



circumstances produce diseases. ~~Lin~~

~~But Pringle has established it.~~ & turn back to 85 -

[On what point of the body do these ~~micro-~~  
turn over to p: 87 1<sup>st</sup> 2<sup>nd</sup> 3<sup>rd</sup>  
micromata act? On the arterial sys-

tem ~~in~~ <sup>on</sup> which they act as stimulants.

[This stimulus in this case is generally  
direct only, in which case a fever of  
violent ~~excessive~~ action is induced - when the

for stimulus of the micromata exceeds <sup>is very</sup>  
great <sup>They first</sup>  
~~the force of direct stimulation~~ produces <sup>interm?</sup>

indirect debility - hence bilious fevers  
are often ushered in with syncope - &  
& apoplexy. <sup>Instances</sup> ~~some cases~~ are not want-

-ing of these micromata producing

Sudden death. -

<sup>2<sup>nd</sup></sup> 3<sup>rd</sup> They act on the nervous system,  
probably this the ~~main~~ <sup>cause</sup> of the  
arterial inducing head act. and



Bilious fevers <sup>ch</sup> are produced by ~~marsh~~ miasmata  
are generally accompanied with  
Inflam<sup>n</sup>: or Congestion in the liver,  
& w<sup>th</sup> a preternatural secretion, &  
excretion of Bile. Galvani produced  
a similar & morbid state of the liver  
by injecting Hydrogene into the  
Esophagus of fowles, & afterwards  
tying <sup>up the gullet</sup> them up untill they died. The  
Livers of brute animals which are  
killed in the fall when it is bilious  
fevers prevail, are generally enlarged,  
& sometimes ulcerated, probably  
from inhaling the ~~hydrogene~~ <sup>gas</sup> of  
marsh exhalations.

⊕ in mild cases of this disease. They  
act by discharging bile from the  
Stomach. The miasmata not only absorb  
bile into the stomach, but they produce  
such an action upon it, as to induce in it  
the secretion of the black matter called B. Vomica.



convulsions. I have seen many inter-  
mittents ushered in by the latter symp-  
toms. — creating sickness & Vomiting.

+ They act on the stomach & ~~the bowels~~  
It is highly important to attend  
to this, as it furnishes the indication for the use of  
emetics, & ~~the bowels~~ <sup>bowels</sup> from miasmata.  
Up in all bilious diseases.

This I ascribe to a ~~kind~~ peculiar dispo-  
sition in the miasmata to act upon  
that viscus, so as to increase the secretion  
& excretion, ~~of bile~~ & perhaps to vitiate  
the quality of the bile. These facts

~~disposed to combat this opinion from~~  
<sup>add weight to</sup>  
~~having fully adopted~~ the old & exploded  
doctrine of ~~the~~ <sup>specific</sup> miasmata.

- li. The miasmata produce in the  
stomach & bowels sickness - Vomiting



✓ Cattle, hogs & sheep that feed on low grounds  
in the fall, have often large inflamed & ulcerated livers.  
✓ Sometimes the bile is ~~often~~ mixed w:

the blood in these fevers, and produces a  
dusky yellow tincture on the skin. An  
epidemic of this kind is described by  
Dr Haller in his Pathology. I ~~saw~~ <sup>saw</sup> it

in the American Army in the  
Autumn of 1776. It is totally dif-  
ferent from the yellow fever of the  
West Indies. It is called febris biliosa-jcteroides

by Sauvage.

\* Does the <sup>same</sup> ~~pusill~~ miasmata, which produce bil. fevers  
act on  
the bowels so as to produce dysentery?

- This is a knotty question. I am disposed

to <sup>answer</sup> ~~believe~~ <sup>that</sup> they do, and the two diseases are

produced by the greater or less predisposition of  
the system to one or other of those disorders,

or by the combination of the miasmata  
with more or less cold, or moisture.



~~Dysenteria~~, ~~in the liver pain - and~~  
~~inflam<sup>n</sup>~~ - The bile is often so ~~vicious~~ <sup>vitiates</sup>  
 in its ~~action~~ <sup>qualities</sup> as to excoriate the fauces  
 & rectum in escaping upwards or  
 downwards - and ~~this~~ after it is dis-  
 charged to occasion syncope by its highly  
 offensive smell. V. go to 2<sup>nd</sup> p 86 Q

are said to  
 4 They act on the blood in some instances,  
 so as to dispose it to a septic tendency. For  
<sup>Dyscrasia</sup>  
~~Like the disposition~~ of the blood <sup>it</sup> appears  
 in these fevers <sup>appears to</sup> be the effect of the  
 violent ~~diminished~~ action of the arteries on it  
 rending & tearing it to pieces. - This exp<sup>n</sup>  
~~of whose deficiency of action the~~  
 of the cause of discoloured blood, you will find in  
 Denham. The action of virus mata is rendered  
 more certain by their <sup>being</sup> combined with  
 cold or moisture. Hence they affect the  
 system most certainly in ~~the~~ morning



of exhalations of the  
from the same mill pond a Dysentery  
will be produced on the inhabitants  
of the summit, and a bilious or inter-  
-mitting fever on the inhabitants of  
the declivity of the same hill. on the  
Summit of the hill, the miasmata  
are combined with more cold, and  
moisture than below it. Mr Bruce tells  
us that he often saw the Dysentery and  
bilious fever alternate with each other  
at Mapash. Dr Sydenham ~~seems to~~  
adopts the idea of <sup>the</sup> being produced by ~~one~~  
hence -  
same kind of miasmata. He calls it the  
Dysentery "febris Enterovessa". Dr Chesborn  
& Dr Jackson are  
of the same opinion. -  
not only the Dysentery, but the <sup>bilious</sup> ~~inter-~~ <sup>colic</sup>  
depends upon the same ~~maner~~



~~Evening~~ - In midday they are elevated <sup>high</sup>  
 in the air & at midnight they are precipitated to the  
 ground. I shall hereafter mention several  
 go to p. 88 & 89.

circumstances which influence the  
 action of ~~animal~~ miasmata on the system.

In the mean while, I proposed to speak

of another combination with Air <sup>or</sup>  
 called 2<sup>d</sup> ~~Human~~ <sup>Animal</sup> miasmata, or mias-  
 mata from living bodies, or idiopathic

However mortifying it may be to hu-  
 man pride, we are forced to admit

that our bodies engender the seeds of  
~~these~~ <sup>ch</sup> fevers. — The morbid matter <sup>is</sup>

produces these diseases is derived from  
 the following ~~sources~~ causes.

1 The want of Cleanliness. This <sup>accor-</sup>  
~~ing to~~ <sup>ing to</sup> Mr Howard is a fruitful source  
 of febrile diseases. <sup>cases</sup> ~~Common~~ garments  
 are tho't to engender the seeds of these



Febricula under different circum-  
stances of weather or constitution.

<sup>The jail fever puts on sometimes the</sup>  
[All the fevers produced by putrid  
Symptoms of Dysentery.]

Vegetable exhalation are at more  
or less contagious. — This is evident

from the authorities of both the kinds,

Dr Clegg — Dr Clarke — Dr Rodgers —

Dr Zimmerman — Riverius &

in short from all the writers on

Epidemics, & I have been met with

it. Innumerable proofs of it have

occurred in our country, & many

~~from~~ <sup>your</sup> own observation, nor ~~was~~ <sup>was</sup>

~~the~~ <sup>the</sup> ~~truth~~ <sup>which prove</sup> facts, nor called in ques-

tion ~~is~~ <sup>by</sup> body, but by the College of

Philadelphia the Professor of the ~~theory~~ <sup>Practice</sup>

of Physic in the University of Pennsylvania

who tho' he <sup>asserted</sup> ~~has~~ taught it, and I am

satisfied ~~does~~ <sup>the contrary</sup> not believe himself. X



fevers more than Cotton or woollen,  
 Attho' the latter are supposed to retain  
 it longer. The fevers of the campaign  
 1796 were ascribed in part to the  
 use of the rifle shirt which was uni-  
 -versally worn by the Southern troops  
 during the late War. —

2 Confinement in a crowd. The plague  
 in Egypt has been ascribed to the inhabi-  
 -tants of the shores of the Nile crowding  
 together during the overflowing of that  
 river. Jails - hospitals - and even  
 Schools often become the sources of  
<sup>fevers from</sup> ~~this disease~~ the confinement and  
 concentration of ~~the~~ the discharges  
 from the pores of the human body.  
 & The discharges from the body are more



X How long the miasmata may lie in the body before it produces a fever is unknown. many facts prove it to be for 20 & even 30 days. But some facts <sup>it is said, make it</sup> much longer. D<sup>r</sup> Jackson says 6 months. ~~which proves that it is~~ new comers seldom take the fever on our neck till the 2<sup>nd</sup> year <sup>after they arrive.</sup> The ~~Dr~~ <sup>Dr</sup> McLeod of Congress informed me [March 7. 1799] that the troops who returned from Canada last war never had Rheumatis till the 2<sup>nd</sup> fall after y<sup>r</sup> return. no other persons had that disease, and no one soldier escaped it] = The sporadic cases of yellow fever which occur in the winter & spring months <sup>are said</sup> to be derived from miasmata still floating in the system. ~~reference to p. 89.~~ ~~after the history~~



I have given of the sources of marsh, or putrid  
 miasmata, and of their effects upon the human  
~~mind~~, body, you will be surprised to hear  
 that the existence of these miasmata has been  
 called in question - very more, that Exp<sup>t</sup> made  
 with the Indianer ~~persons~~ <sup>both</sup> in America and  
 America prove that they have no existence at all,  
 and that the atmosphere supposed to contain them,  
 is two degrees purer than the air of adjoining, and  
 healthy mountains. To these exp<sup>t</sup>s I shall only reply  
 that the same mode of reasoning would prove the  
 non existence of those matters ~~in~~ in the air which  
 produce the small pox, measles, & an hundred odors  
<sup>or</sup> float in the atmosphere, none of which I believe  
 ever discover themselves by means of any of the  
 chemical test that ever has been invented. As well might  
 we might we deny the existence of spirit, because it  
 cannot be made obvious to our senses as the air:  
 because they are not to be discovered by the Indianer.  
 = true of miasmata, The ~~last~~ West Indies, and the  
 Game Guards of the United States ~~are~~ have furnished  
 within the last <sup>12</sup> years many - many thousand  
 proofs of this existence. To deny them is to renounce Reason  
 all observation, & even the evidence of our senses. go to p 84. ©



